Non Fat Dry Milk

Non-Fat Dry Milk (NFDM), also known as Dried Skim Milk (DSM), is dry milk powder, produced by extracting fat and water from pasteurized, fresh cow's milk. NFDM has a high nutritional value and is a source of high quality animal protein. NFDM may be used in therapeutic feeding or as an ingredient in supplementary food. Distribution of NFDM must be in accordance with policy guidelines www.usaid.gov/hum_response/ffp/supplementary.html. NFDM has limited storage stability (see guidance on shelf life). NFDM can be monetized as indicated in the USAID policy www.usaid.gov/hum_response/ffp/nonfat_drymilk_policy.html. Lactose intolerance has been associated with consumption of NFDM; however, this is rare in supervised program settings such as therapeutic feeding centers. Policy information on the use of NFDM for therapeutic feeding is available at www.usaid.gov/hum_response/ffp/therapeutic.html. For guidance on therapeutic feeding, refer to the WHO manual, *The Management of Severe Malnutrition* (1999). For more information on the lactose content of NFDM, refer to Part Two of the CRG.

1. NUTRITIONAL VALUES (per 100 g)

These are average values for fortified NFDM, taken from the U.S. Department of Agriculture, Agricultural Research Service (USDA:ARS) 2001 USDA Nutrient Database, Release 14, Laboratory Home Page, (www.nal.usda.gov/fnic). These nutrient values are provided as a guide for use in the calculation of food aid rations; users should be aware that shipments of food aid may vary from these exact nutrient values.

Nutrient	Amount	Unit
Water	3.16	g
Energy	362	Kcal
Protein	36.16	g
Total Lipid	0.77	g
Carbohydrate	51.98	g
Fiber, total dietary	0.0	g
Ash	7.93	g
Calcium	1257	mg
Iron	0.32	mg
Magnesium	110	mg
Phosphorus	968	mg
Potassium	1794	mg
Sodium	535	mg
Zinc	4.08	mg
Copper	0.04	mg
Manganese	0.02	mg
Selenium	27.3	mcg
Vitamin C	6.8	mg
Thiamin	0.42	mg
Riboflavin	1.55	mg
Niacin	0.95	mg
Pantothenic acid	3.57	mg
Vitamin B-6	0.36	mg
Folate	50	mcg
Vitamin B-12	4.03	mcg
Vitamin A[1] (fortified)	3000	IU
Vitamin E	0.02	mg-ATE
Vitamin D (fortified)	600	IU
Iodine	0	mcg

[1]For conversion of vitamin A content to Retinol Equivalents, 1 IU = 0.3 µg.

2. COMPONENTS

Fortified NFDM contains 3000 IU of vitamin A and 600 IU of vitamin D (per 100 grams).

3. SPECIFICATIONS

NFDM shall be U.S. Extra Grade, spray process. NFDM shall conform in every respect to the provisions of the "Federal Food, Drug, and Cosmetic Act," as amended, and the regulations promulgated thereunder, including any Defect Action Level guidelines issued by the Food and Drug Administration (FDA) which may be applicable to NFDM (See Table next page).

CHEMICAL AND PHYSICAL REQUIREMENTS

ITEM	REQUIREMENT Minimum	Maximum
Milk Fat, %	--	1.25
Moisture, %	--	3.50
Bacterial Estimate, per gram standard plate count	--	10,000
Scorched Particles, mg	--	15.0
Solubility Index, ml	--	1.2[1]
Titratable Acidity, % (lactic acid)	--	0.15

Salmonella and penicillin shall be negative; coliform count shall not be more than 10 per gram.

[1]Product classified as high heat may not have more than 2.0 ml.
(Source: USDA: FSA: PDD: EOB March 2002. Contact 202-690-3565)

4. PACKAGING

25 kg (55 lb.) bags of multi-wall paper with a polyethylene inner liner.

5. SHELF LIFE

The shelf life for fortified NFDM is not available; however, the shelf life for unfortified NFDM is forty-eight months. The Best if Used by Date (BUBD) for fortified NFDM is eighteen months. See "Section III: Storage/Shelf Life Specifications" for more information. (Source: USDA: FSA: PDD May 2002.)